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LENINGRAD LENSOVET TECH *SU 1128-978-A
22.09.82-SU-493040 *(15.12.84)* B01j-23/74 B01j-37/02

Hydro-siliconising catalyst prepn. - involves treatment of silica gel contg. functional organo-silane gps. with nickel chloride

C85-069335

E(5-E, 5-G2, 5-G3, 35-W) J(4-E4) N(5-C)

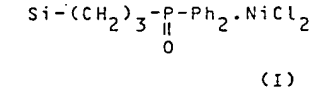


Typically, catalyst of formula (I) is obtd. by the treatment of 0.8 g silica gel powder (contg. 4 mmol/g surface OH-gps.), heated in vacuo for 5 hrs. at 180 deg.C, with a soln. of 1.4g (gamma-methyl-dimethoxysilyl) propyldiphenyl phosphine oxide in 5 ml toluene, for 10 hrs. at 100 deg. C. The obtd. prod. is filtered, washed in toluene, then pentane and dried in vacuo. Substn. of surface OH-gps. 40%. The nickel is fixed by further treatment of the obtd. 0.8g silica gel with 8-15 ml (excess) of a 3-5% alcoholic soln. of nickel chloride for 1-1.5 hrs. at room temp. The end-prod. is filtered and washed in alcohol.

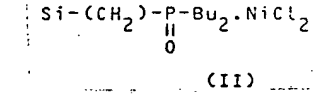
Catalysts (I) and (II) are prepd. in a similar manner using (gamma-methyldiethoxysilyl) propyldibutyl phosphine oxide and triethoxysilylmethyl -dibutyl phosphine oxide, respectively.

Typically, in the hydrosilylation of heptene-1 with methyldichlorosilane, 10 power minus 2 mol of the first catalyst per mol of olefin, are added to a 1:1 (mol) mixt. of components. The reaction mass is heated for 10 hrs. at 120 deg. C. The catalyst is filtered off, washed in pentane and reused three times. Yields of 76, 74 and 74% are obtd. for each usage. With the second catalyst used 4 times yields of 75, 76, 72 and 73% are obtd. The third catalyst used 3 times with octene-1 and trichlorosilane gives yields of octyl trichlorosilane of 82, 85 and 83%.

ADVANTAGE - The cheaper catalyst is in no way inferior to those prepd. from the precious metals of Gp. VIII. Bul.46/15.12.84 (3pp Dwg.No 0/0)



(I)



(II)

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